

WHAT'S NEW IN MONTANA'S 2012 INTEGRATED REPORT

Revisions to the Assessment Method

The Montana Department of Environmental Quality (DEQ) made a substantial change to Montana's Water Quality Assessment Method for the 2012 Integrated Reporting cycle. The most dramatic changes are the use of pollutant-specific methods to assess water quality and the process for how DEQ assesses the data to be used for assessments. The new method allows DEQ to have a transparent and repeatable process for making use-support decisions and, moreover, will improve the level of certainty in assessment decisions.

DEQ has developed assessment methods for nutrients, sediment, and metals pollutant groups, which represent the most common pollutants impairing Montana's surface waters. Each pollutant method provides the framework for conducting sound and consistent water quality assessments, which will allow DEQ to make reproducible and defensible beneficial use support (i.e., 303(d) listing) decisions.

Montana is the only state with a triple divide, its rivers and streams provide water for three oceans and three of the North American continent's major river basins.

The pollutant-based assessment methods have specific objectives and decision-making criteria for assessing the validity and reliability of data. The new method uses a Data Quality Assessment (DQA) process to evaluate data for use in assessments. The data evaluation considered the technical, representativeness, currency, quality, and spatial and temporal components of readily available data and information for each of the data types (biology, chemical, and physical/habitat). It established a measure of each data type's rigor, and the sum of all data types were translated to a qualitative statement of confidence for the beneficial-use assessment.

TMDLs Work!

During the 2012 reporting cycle, the sediment cause on Big Creek, which was delisted from category 5 (TMDL needed) to category 4A (TMDL approved) in the 2004 cycle due to an approved sediment TMDL, has been moved to category 1 as the data indicate it no longer exceeds water quality standards for sediment. This is Montana's first of (hopefully) many TMDL success stories!

Two other pollutant causes were removed (delisted) from waterbodies on the 303(d) list (category 5) as new data indicated they are no longer exceeding standards, Swift Creek for Phosphorus (Total) and Sheep Creek for Mercury.

| 2012 305(b) ID | Waterbody Description / Location | Cause Delisted |
|----------------|---|--------------------|
| MT76Q002_050 | BIG CREEK, tributary to North Fork of the Flathead River | Sediment/Siltation |
| MT76P003_020 | SWIFT CREEK, headwaters (East and West Forks) to mouth (Whitefish Lake) | Phosphorus (Total) |
| MT41J002_030 | SHEEP CREEK, headwaters to mouth (Smith River) | Mercury |

*The
Yellowstone
River is not
dammed,
making it
the longest
free-
flowing
river in the
lower 48*

Yellowstone Pipeline Oil Spill

On July 1, 2011 a pipeline under the Yellowstone River at Laurel, Mt ruptured, releasing an estimated 1,200 Barrels (nearly 50,000 gallons) of crude oil into the river. Clean-up began immediately following the discovery of the incident and continued through mid-October 2011. While long term environmental impacts have yet to be determined, three assessment units of the Yellowstone River have been listed for being impaired by oil and grease. More information will be provided and soil and water sampling results will be reported in the 2014 Integrated Report.

| 2012 305(b) ID | Current Waterbody Description |
|----------------|---|
| MT43F001_010 | YELLOWSTONE RIVER, City of Billings PWS to Huntley Diversion Dam |
| MT43F001_011 | YELLOWSTONE RIVER, City of Laurel PWS to City of Billings PWS |
| MT43Q001_011 | YELLOWSTONE RIVER, Huntley Diversion Dam to mouth of Big Horn River |

Changes to Beneficial Use Reporting

Generally, if a waterbody supports drinking water, culinary and food processing, recreation, and aquatic life beneficial uses, the state assumes it will also support agricultural and industrial uses. DEQ, therefore, has discontinued assessing for or reporting impairments to industrial uses.

As fish are a part of aquatic life they are no longer tracked and reported independently of aquatic life and are now assessed and reported within the aquatic life beneficial use.

*Flathead Lake contains
over 200 square miles
of water surface and
185 miles of shoreline.
It is considered the
largest natural
freshwater lake in the
west*

Changes to Causes

In March 2006 the state changed its water quality criterion for coliform bacteria from fecal coliform to Escherichia coli bacteria. To align the 303(d) bacteria listings with water quality standards, and eventual TMDL development, all "Fecal Coliform" listings without an approved TMDL were changed to "Escherichia coli." Twelve fecal coliform listings were delisted and replaced with Escherichia coli. Cycle first listed (CFL) dates for Fecal Coliform were retained with the Escherichia coli listings so that the initial reporting of the impairments were not lost.

*The most common
documented cause for
impairment of rivers
and streams in
Montana is
sedimentation/siltation
due to grazing along
the shoreline zones*

Nutrient listings for "Total Kjeldahl Nitrogen (TKN)" were revised to "Nitrogen (Total)." In cases where a TMDL was already developed and approved explicitly for TKN or where TKN and TN were both previously listed, the TKN listing was retained. This

cause change aligns with the TMDL development approach where total nitrogen is used for nitrogen-related impairments because it is a more encompassing and stable representation of nitrogen than TKN. Ninety four TKN listings were delisted and replaced with Nitrogen (Total). Cycle first listed (CFL) dates for TKN were retained with the Nitrogen (Total) listings so that the initial reporting of the impairments were not lost.

Changes to Assessment Units

During the 2012 reporting cycle we added or modified 17 waterbodies for assessment purposes. This included designating 16 new AUs and modifying one existing AU by merging into a single unit with another AU.

| 2010 305(b) ID | 2012 305(b) ID | Current Waterbody Description | Type | Comments |
|----------------|----------------|--|-------|--------------------------------------|
| MT41I006_010 | MT41I007_040 | PRICKLY PEAR CREEK, Lake Helena to Hauser Lake | Merge | Merged into Hauser Lake MT41I007_040 |
| | MT40J002_040 | CLEAR CREEK, headwaters to mouth (Milk River) | New | Added |
| | MT40Q002_030 | WEST FORK POPLAR RIVER, Canadian border to Fort Peck Reservation | New | Added |
| | MT41G002_170 | JEFFERSON SLOUGH, Jefferson River to the mouth (Jefferson River) | New | Added |
| | MT41K002_040 | HUBER COULEE, headwaters to mouth (Sun River Valley Ditch) | New | Added |
| | MT43A002_060 | PORCUPINE CREEK, headwaters to mouth (Shields River) | New | Added |
| | MT43A002_070 | FLATHEAD CREEK, headwaters to the mouth (Shields River) | New | Added |
| | MT43D002_170 | BRIDGER CREEK, headwaters to mouth (Clarks Fork Yellowstone River) | New | Added |
| | MT43D002_190 | DRY CREEK, headwaters to mouth (Clarks Fork Yellowstone River) | New | Added |
| | MT76E002_061 | ANTELOPE CREEK, headwaters to mouth (Rock Creek) | New | Added |
| | MT76E003_140 | ROYAL GOLD CREEK, headwaters to mouth (Boulder Creek) | New | Added |
| | MT76G004_130 | ONTARIO CREEK, headwaters to mouth (Little Blackfoot River) | New | Added |
| | MT76M002_200 | HALL GULCH, headwaters to mouth (Flat Creek) | New | Added |
| | MT76O003_030 | MIDDLE FOY LAKE | New | Added |
| | MT76G004_054 | O'KEEFE CREEK , headwaters to mouth (Telegraph Creek) | New | Added |
| | MT76G004_055 | SALLY ANN CREEK, headwaters to mouth (O'Keefe Creek) | New | Added |
| | MT76G004_079 | AMERICAN GULCH CREEK, headwaters to mouth (Dog Creek) | New | Added |

Waterbodies added to the 303(d) list (Category 5)

During the course of assessing waters during the 2012 cycle two new waterbodies were found to have at least one of their beneficial uses impaired and were added to the 303(d) list (category 5)

| 2012 305(b) ID | Waterbody Description / Location | Cause |
|----------------|--|----------|
| MT41K002_040 | HUBER COULEE, headwaters to mouth (Sun River Valley Ditch) | E. coli |
| MT76D003_010 | LAKE KOOCANUSA | Selenium |

Lake Koocanusa received its name in a contest to name the Libby Dam reservoir by combining the first three letters from KOOtenai River, and the first three letters of CANada and USA

2012 Cycle Approved TMDLs (Category 4A)

During the 2012 reporting cycle 117 TMDLs were approved delisting pollutant causes from 45 waterbodies (49 AUs).

| 2012 305(b) ID | Waterbody Description / Location | Cause Delisted |
|----------------|--|--|
| MT41U001_011 | BELT CREEK, headwaters to Big Otter Creek | Arsenic, Cadmium, Copper, Lead, Zinc |
| MT41U001_012 | BELT CREEK, Big Otter Creek to mouth (Missouri River) | Arsenic, Cadmium, Iron, Lead, Salinity, Zinc |
| MT41U002_010 | CARPENTER CREEK, headwaters to mouth (Belt Creek) | Arsenic, Cadmium, Copper, Iron, Lead, Silver, Zinc |
| MT41U002_020 | GALENA CREEK, headwaters to mouth (Dry Fork Belt Creek) | Arsenic, Cadmium, Copper, Iron, Lead, Zinc |
| MT41U002_030 | DRY FORK BELT CREEK, headwaters to mouth (Belt Creek) | Arsenic, Cadmium, Copper, Iron, Lead, Zinc |
| MT76H001_020 | BITTERROOT RIVER, Skalkaho Creek to Eightmile Creek | Temperature, water |
| MT76H001_030 | BITTERROOT RIVER, Eightmile Creek to mouth (Clark Fork River) | Temperature, water |
| MT76H004_010 | BASS CREEK, Selway-Bitterroot Wilderness boundary to mouth (un-named channel of Bitterroot River), T9N R20W S3 | Sedimentation/Siltation |
| MT76H004_090 | SLEEPING CHILD CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation, Temperature, water |
| MT76H004_110 | WILLOW CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation, Temperature, water |
| MT76H004_120 | AMBROSE CREEK, headwaters to mouth (Threemile Creek) | Sedimentation/Siltation |
| MT76H004_130 | MILLER CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation, Temperature, water |
| MT76H004_140 | THREEMILE CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation |
| MT76H004_150 | McCLAIN CREEK, headwaters to mouth (Sin-tin-tin-em-ska Creek), T11N R20W S23 | Sedimentation/Siltation |
| MT76H004_170 | LICK CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation |
| MT76H004_180 | MUDDY SPRING CREEK, headwaters to mouth (Gold Creek) T7N R19W S2 | Sedimentation/Siltation |
| MT76H004_190 | RYE CREEK, North Fork to mouth (Bitterroot River) | Sedimentation/Siltation |
| MT76H004_200 | NORTH BURNT FORK CREEK, confluence with South Burnt Fork Creek to Mouth (Bitterroot River) | Bottom Deposits |
| MT76H004_210 | SWEATHOUSE CREEK, headwaters to mouth (Bitterroot River) | Sedimentation/Siltation |
| MT76H005_011 | LOLO CREEK, Mormon Creek to mouth (Bitterroot River) | Sedimentation/Siltation |
| MT76H005_012 | LOLO CREEK, Sheldon Creek to Mormon Creek | Sedimentation/Siltation |
| MT76H005_013 | LOLO CREEK, headwaters to Sheldon Creek | Sedimentation/Siltation |
| MT76N003_040 | BULL RIVER, the North Fork to mouth (Cabinet Gorge Reservoir) | Sedimentation/Siltation |
| MT76N003_090 | MARTEN CREEK, headwaters to mouth (Noxon Reservoir) | Sedimentation/Siltation |
| MT76N003_120 | WHITE PINE CREEK, headwaters to mouth (Beaver Creek) | Sedimentation/Siltation |
| MT76N003_140 | SWAMP CREEK, Cabinet Mountains Wilderness boundary to mouth (Noxon Reservoir) | Sedimentation/Siltation |
| MT76N003_180 | DRY CREEK, headwaters to mouth (Bull River), T28N R33W S32 | Sedimentation/Siltation |
| MT41Q002_020 | COTTONWOOD CREEK, 1 mile above Stockett to mouth (Sand Coulee Creek-Missouri River) | Aluminum, Cadmium, Iron, Nickel, Zinc |
| MT41Q002_030 | NUMBER FIVE COULEE, headwaters to mouth (Cottonwood Creek) | Aluminum, Cadmium, Iron, Nickel, Zinc |
| MT41Q002_060 | SAND COULEE, headwaters to mouth (Sand Coulee Creek) | Aluminum, Cadmium, Copper, Iron, Nickel, Salinity, Zinc |
| MT40S002_010 | PRAIRIE ELK CREEK, East and Middle Forks to mouth (Missouri River) | TN, TP, TKN |
| MT40S002_030 | SAND CREEK, confluence of East and West Forks to mouth (Missouri River) | TN, TP, TKN |
| MT40P001_012 | REDWATER RIVER, Hell Creek to Buffalo Springs Creek | TN, TP |
| MT40P002_010 | EAST REDWATER CREEK, headwaters to mouth (Redwater River) | Nitrate/Nitrite (Nitrite + Nitrate as N), Specific Conductance, Sulfates, TN, TP, TDS, TKN |
| MT40P002_020 | HORSE CREEK, headwaters to mouth at Redwater River near town of Circle | TN, TP, Salinity |
| MT40P002_030 | PASTURE CREEK, headwaters to mouth at Redwater River | TN, TP, TKN |
| MT40E003_010 | TIMBER CREEK, headwaters to mouth (Big Dry Creek arm of Fort Peck Res) | TN, TP, TKN |

| 2012 305(b) ID | Waterbody Description / Location | Cause Delisted |
|----------------|---|--|
| MT40E003_020 | NELSON CREEK, headwaters to mouth (Big Dry Creek arm of Fort Peck Res) | Nitrates, Sulfates, TDS, TN, TP |
| MT76D004_010 | TOBACCO RIVER, confluence of Grave Creek & Fortine Creek to mouth (Lake Koocanusa) | Sedimentation/Siltation |
| MT76D004_020 | FORTINE CREEK, headwaters to mouth (Grave Creek) | Sedimentation/Siltation |
| MT76D004_030 | EDNA CREEK, headwaters to mouth (Fortine Creek) | Sedimentation/Siltation |
| MT76D004_040 | SWAMP CREEK, headwaters to mouth (Fortine Creek) | Sedimentation/Siltation |
| MT76D004_050 | LIME CREEK, headwaters to mouth (Fortine Creek) | Sedimentation/Siltation |
| MT76D004_070 | TERRIAULT CREEK, headwaters to mouth (Tobacco River) | Sedimentation/Siltation |
| MT76D004_080 | DEEP CREEK, headwaters to mouth (Fortine Creek) | Sedimentation/Siltation |
| MT76D004_091 | SINCLAIR CREEK, confluence of un-named tributary, Lat -114.945 Long 48.908 to mouth (Tobacco River) | Sedimentation/Siltation |
| MT41H005_040 | WEST FORK GALLATIN RIVER, confluence Middle and North Forks to mouth (Gallatin River) | Nitrate/Nitrite (Nitrite + Nitrate as N), Sedimentation/Siltation, TN |
| MT41H005_050 | MIDDLE FORK WEST FORK GALLATIN RIVER, headwaters to mouth (West Fork Gallatin River) | E. coli, Fecal Coliform, Nitrate /Nitrite (Nitrite + Nitrate as N), Solids (Suspended/Bedload) |
| MT41H005_060 | SOUTH FORK WEST FORK GALLATIN RIVER, headwaters to mouth (West Fork Gallatin River) | Nitrate/Nitrite (Nitrite + Nitrate as N), Sedimentation/Siltation |

*TN = Nitrogen (Total), TP = Phosphorus (Total), TKN = Total Kjeldahl Nitrogen, TDS = Total Dissolved Solids

In the 5 years from 2006 – 2011 Montana has developed 461 “EPA-approved” TMDLs. More than any other state in EPA Region 8

**To view the entire 2012 Water Quality Integrated Report go to
CWAIC.MT.Gov/wq_reps.aspx?yr=2012qryId=91992**